

## **ABSTRACT**

A radio communications system is disclosed having an intrinsic pavement transmitter and antenna. A first transmitter/receiver is located at a first point along the intrinsic pavement transmitter and antenna, and is in communication with a user. A second transmitter/receiver is located at a second point along the intrinsic pavement transmitter and antenna, and is in communication with an end-user. The intrinsic pavement transmitter and antenna conducts radio frequency signals between the first and second transmitter/receiver. An intrinsic pavement transmitter and antenna is also disclosed. The intrinsic pavement transmitter and antenna comprises a roadway having a suitable wearing course material and an effective amount of radio frequency conductive material, sufficient to transmit and receive radio frequencies.